

RECEIVED
CENTRAL FAX CENTER

APR 03 2009

MARSHALL, GERSTEIN & BORUN LLP
ATTORNEYS AT LAW
6300 SEARS TOWER
233 SOUTH WACKER DRIVE
CHICAGO, ILLINOIS 60606-6357
(312) 474-6300
FAX: (312) 474-0448

4/3/2009

FACSIMILE TRANSMISSION SHEET

TO: Examiner Ebenezer O. Sackey

The United States Patent &
Trademark Office

571-273-8300

FROM: Richard H. Anderson

RE: USSN: 10/786,793-Conf#3775 - Our Ref.: 27702/10059 US

PAGES (INCLUDING THIS PAGE): 3

Examiner Sackey,

Attached are the requested replacement pages 9 and 14 for the above-identified patent application.

For: Richard H. Anderson
by Jonathan Goodman, Ph.D.

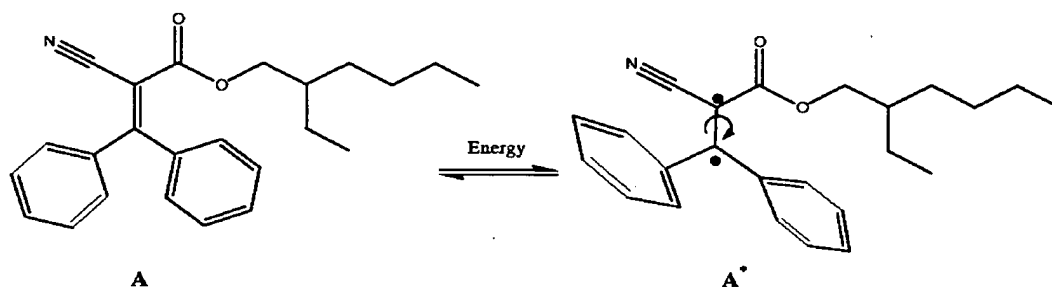
If you do not receive all pages of this fax in good condition, please contact Lillian Ruiz-Orellana at (312) 474-6300.

This transmission contains confidential information intended only for the addressee. If you are not the addressee, any disclosure or use of this information by you is strictly prohibited. If you have received this facsimile in error, please notify us by telephone immediately.

Draft Patent Application
27702/10059

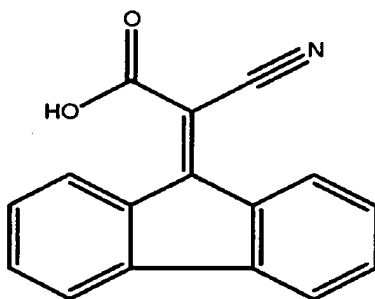
-9-

commonly assigned U.S. Patent Application Nos. 10/241,388, 10/361,223, and 10/785,271 (now US Patent No. 6,899,866). Without intending to be limited to any particular mechanism by which an α -cyano- β,β -diphenylacrylate compound is able to quench the excited state of photoactive compound, it is theorized that the α -cyano- β,β -diphenylacrylate compound accepts the excited state energy and dissipates the energy kinetically in the form of rapid isomerizations. This process is shown below:



wherein the α -cyano- β,β -diphenylacrylate compound (octocrylene shown above as structure A), accepts the triplet excited state energy from a photoactive compound and forms a diradical (shown above as structure A*) at the α and β positions of the acrylate, which converts the double bond into a single bond and allows for the free rotation of the phenyl groups. This rotation occurs rapidly and efficiently to dissipate any excited state energy accepted by the α -cyano- β,β -diphenylacrylate compound from the photoactive compound. In solution (*e.g.*, a sunscreen composition), a key limitation on the ability of a compound to photostabilize another compound is the ability of the two compounds to come into contact with one another.

The general structure of a fluorene moiety (cyano(9H-fluoren-9-ylidene)acetic acid) is shown below:



Draft Patent Application
27702/10059

-14-

to the polymer backbone. Also disclosed herein is a method of waterproofing a material by forming a film on a surface of a material, wherein the film includes a polymer containing one or more of crylene and/or fluorene moieties attached to the polymer.

5 A photoactive compound can be considered stable when, for example, after 30 MED irradiation the photoactive compound has retained at least about 90% of its original absorbance at a wavelength, or over a range of wavelengths of interest (*e.g.*, the wavelength at which a photoactive compound has a peak absorbance, such as 350-370 nm for avobenzene). Likewise, a sunscreen composition can include a
10 plurality of photoactive compounds and a sunscreen composition, as a whole, can be considered stable when, for example, after 30 MED irradiation the sunscreen composition has retained at least about 90% of its original absorbance at one or more wavelengths of interest (*e.g.*, at or near the peak absorbance wavelength of the primary photoactive compound).

15 In commonly assigned U.S. Patent Application Nos. 10/241,388, 10/361,223, and 10/785,271 (now US Patent No. 6,899,866), the disclosures of which are hereby incorporated by reference, it was found that the addition of an α -cyano- β , β -diphenylacrylate compound and a diester or polyester of naphthalene dicarboxylic acid were able to stabilize a photounstable UV-absorbing compound, *e.g.*, a
20 dibenzoylmethane derivative, such as PARSOL 1789, in a sunscreen composition. It has surprisingly been found that sunscreen compositions containing a combination of (1) a polymer containing one or more crylene and/or fluorene moieties covalently bonded to the polymer backbone, and (2) a diester or polyester of naphthalene dicarboxylic acid can significantly increase the photostability of any photounstable
25 component(s) present therein (*e.g.*, a dibenzoylmethane derivative). Without intending to be limited to any particular mechanism of achieving this increase in photostability, it is believed that a diester or polyester of naphthalene dicarboxylic acid stabilizes a dibenzoylmethane derivative by accepting the triplet energy of the dibenzoylmethane derivative once the dibenzoylmethane derivative has reached an
30 excited state as a result of the absorption of ultra-violet light. Once a dibenzoylmethane derivative is excited, it is prone to degrade according to a number